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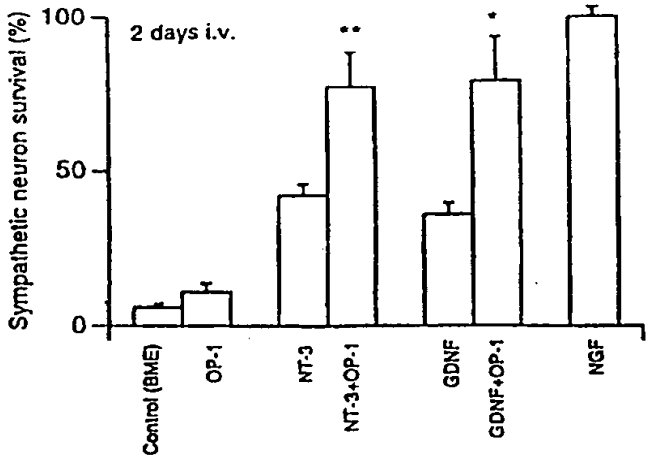

(57) Abstract

A synergistic effect of OP/BMP morphogens in combination with GDNF/NGF neurotrophic factors in promoting the survival or growth, or inhibiting the death or degeneration, of mammalian cells, particularly neural cells, which express OP/BMP–activated serine/threonine kinase receptors and GDNF/NGF–activated tyrosine kinase receptors, is disclosed. Also disclosed are new methods for the *in vivo* and *in vitro* treatment of such cells, including *in vivo* treatments for mammals afflicted with, or at imminent risk of, damage or injury to such cells, as well as new pharmaceutical preparations for such *in vivo* and *in vitro* treatments.